

China – Changing the global education landscape

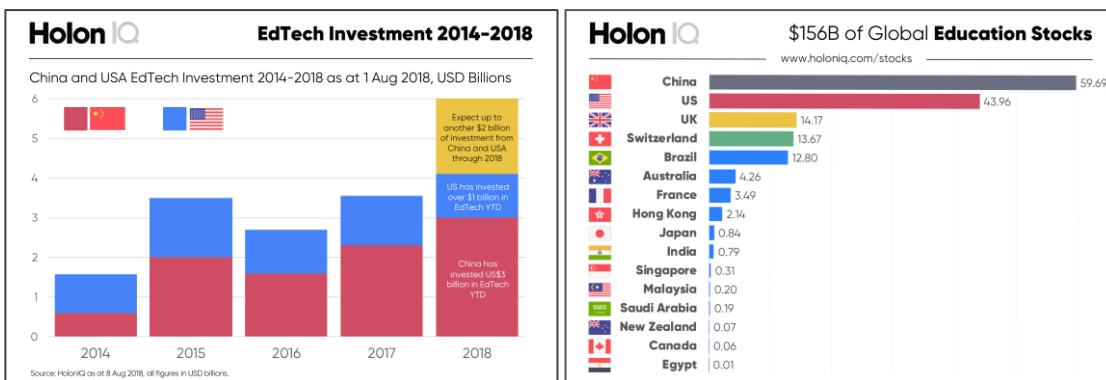
22 November 2018

The following reflections come from my recent participation in the [HolonIQ China Executive Immersion Program](#) and attendance at the *Global Education Technology (GET) 2018 conference* in Beijing. My thanks to Maria Spies and Patrick Brothers at HolonIQ for the invitation to join the program. A summary of the program is at [Appendix A](#).

Context

A number of recent media reports in [Australia](#)¹ and [the US](#)² have started to unpack China's investment in education, technology, artificial intelligence and its stunning economic performance. They are increasingly interlinked.

China's education market is now the largest in the world in terms of both ed-tech investment and investment in education stocks.³



Why is China so dominant?

It's a combination of scale, culture, economic progress, and ambition.

1. **Scale:** with a population of 1.4 billion people there are a lot of people to educate in China. Eight hundred million are internet users and almost as many, 788 million, have a smart phone.⁴
2. From a **cultural perspective** education is highly valued. The rigorous and highly selective Chinese university entrance exam (the Gaokao) creates a funnel for access to the best universities and the best jobs in the Chinese public sector on graduation. To help their children get ahead in a predominantly public school system – Chinese parents invest very significant amounts into after-school tutoring. The Chinese after-school sector is estimated to be worth approx. USD \$100 billion. While the after-school market was traditionally face-to-face, it is moving increasingly online and attracting significant levels of investment along

1 See also: <https://www.theaustralian.com.au/higher-education/aussie-online-educators-set-sights-on-china/news-story/44dc75b420bb22f30290b3dba61afd7c>

2 See also: <https://www.nytimes.com/interactive/2018/11/18/world/asia/china-internet.html>

3 Most Chinese companies are listed outside China – in either the US or Hong Kong.

4 Sophie Chen, JMDEdu, 2018 *China's Education & EdTech Market Report* Presentation to HolonIQ China Executive Immersion Program, November 2018

the way. In 2017 urban Chinese students spent an average of 10.6 hours per week on after-school classes, 58% of high school students received some after-school tutoring, and the average annual expenditure is approximately USD \$900 per person.⁵

3. **Economic progress** – with a rapidly rising middle class, investment by parents in education is only expected to grow (especially since China's one-child policy has been lifted and enrolments in kindergarten are increasing). Since it began its economic reforms in the late 1970s the Chinese government has lifted 800 million people out of poverty. The World Bank describes this achievement as a “great story in human history”. The life opportunities of the Chinese people have been transformed. In the early 1980s 88% of the population lived in poverty. Today that figure is less than 2% of the population.⁶ Looking at the Chinese middle class - McKinsey estimates that by 2022 – 76% of urban Chinese will be middle class, compared with only 4% in 2000.⁷
4. Then there's the Chinese government's **explicit** ambition to lead the world on AI by 2030.⁸ In a short time China has shown itself to be well on its way to achieving this goal. In 2016 China represented 11% of all funding for AI start-ups (in all sectors of the economy not just in education). By 2017 – in just one year – they had grown their share to 48%, outpacing the US with 38% and the rest of the world on 13%.⁹

The after-school sector and why it will transform teacher training globally in *all* education sectors

As noted above the specifics of the Chinese education system and Chinese culture have combined to create a significant after-school education sector. Measured in terms of expenditure as a proportion of annual income, Chinese people invest more than double the amount Americans invest in education despite China having a dominant public school and university system.

English is a mandatory subject in the Gaokao exams – so a considerable proportion of the spending in the after-school sector is on English language tuition. Chinese parents prefer foreign tutors and have a high degree of comfort with technology. This has allowed Chinese after-school providers to shift quickly into online and video learning, and the scale of their operations is incredible.

Two of the companies I visited¹⁰ as part of the HolonIQ Immersion program, TAL and VIPKid, are using real time video learning backed by AI to transform English language teaching – and they are just two of many Chinese companies in this space. TAL is listed on the New York Stock Exchange and has a market cap of USD \$15.3 billion. VIPKid is a start-up which has secured USD \$3 billion in investment since it began five years ago.

VIPKid began in 2013 when a Chinese educator and entrepreneur, Cindy Mi, engaged 10 US-based English teachers to teach English online to Chinese students. VIPKid offers a flipped classroom learning model where the student watches a pre-class video, then has a 25 minute one-on-one fully immersive English interactive class with a native English trained teacher in the US, and then has post-class online homework.

⁵ ibid

⁶ <https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2018/05/31.pdf>

⁷ The middle class is defined globally as earning between USD \$9,000 and USD \$34,000 per annum – which is clearly below Australian standards but adjusted for local prices – allows for a middle class existence and means Chinese parents have increasing amounts of disposable income to spend on education.

⁸ Outlined in its 2017 “Next Generation Artificial Intelligence Development Plan” – the Chinese government intends to create a domestic AI industry worth \$150 billion.

⁹ <https://multimedia.scmp.com/news/china/article/2166148/china-2025-artificial-intelligence/index.html>

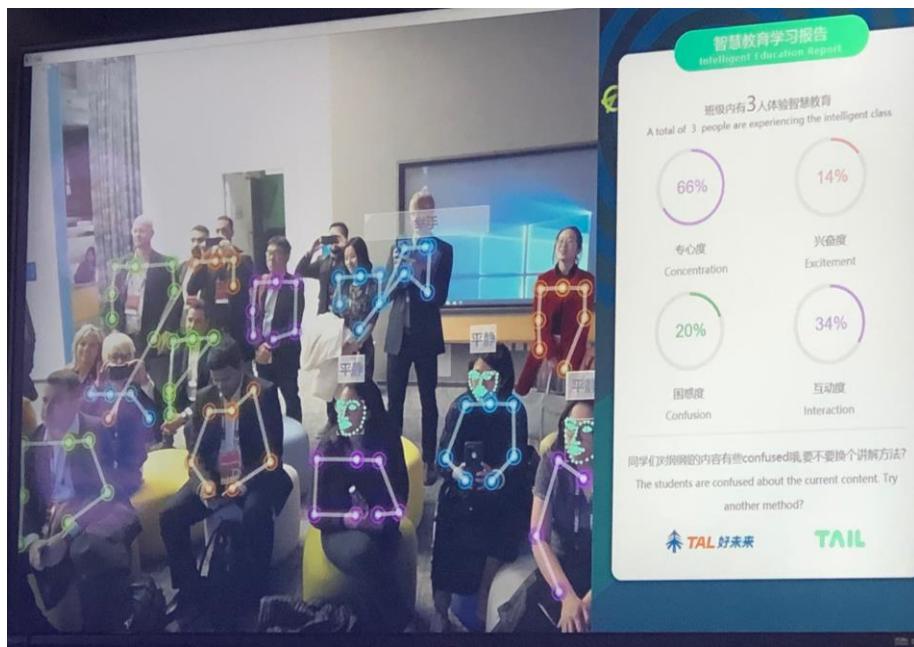
¹⁰ Due to work commitments I was unfortunately unable to join the visit to 17zuoye.

They now employ more than 60,000 US teachers (who collectively have an average of 7.5 years' experience) to teach approximately 500,000 Chinese students.

To ensure there are no latency issues with their video technology, they have invested in two undersea cables laid between the US and China. This allows for high definition video, real time monitoring from an app on the parent's phone, and for more than 20,000 classes to be taught at the same time.

And this is not restricted to English language teaching.

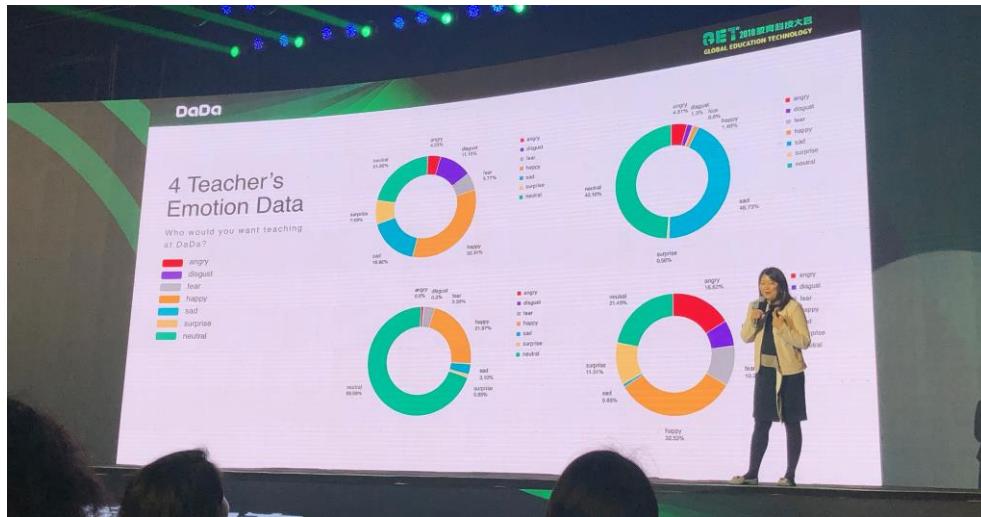
TAL delivers face-to-face education, in a range of subjects, to 4.2 million students in 42 cities across China and educates another 18 million learners online. They employ 5,000 people in their research and development team and an additional 1,500 animators. AI is one of the key features of their underpinning approach as the image below demonstrates. It shows how video is used to track learner engagement with course content and provides real time feedback to teachers (note that four of the 14 learner engagement measures they monitor are shown in this demonstration – TAL teachers receive real time feedback on all 14 measures of learner engagement).



While much of this innovation backed by AI is taking place in the English language sector – it is not confined to it. VIPKid, not content to stay in the English language sector, is preparing to deliver STEM subjects using AI supported video learning in 2019. They will join the likes of TAL and Youdao (the educational arm of leading Chinese internet and online games provider Netease) which are already using video and online learning to reach millions of Chinese learners with a range of subject offerings for learners 'from K to grey' (ie young children to mature age learners).

Staggeringly, Youdao, is even bigger in terms of student users than TAL. One of its brands, Youdao Dictionary, has 700 million users (43.1 million are active each month). Youdao Course – its online courses brand – has 17 million users daily and once again their offerings are backed by AI to collect and analyse data on what makes for effective teaching.

While we did not visit DaDa, another online start-up in the English language space, their founder and CEO presented at the GET conference and gave explicit examples of the information they collect on their teachers, using AI, and how they interpret it.¹¹



So why will the after-school Chinese education giants transform teaching right across the world?

Because of the use of AI to monitor both student and teacher engagement and to match that with data on student progress and outcomes.

Put simply – companies like Youdao, TAL, VIPKid, DaDa and many others in China are using artificial intelligence to analyse and track how teachers and students interact with one another and to match these interactions with the students’ academic performance. This information is then fed back to teachers to improve their practice.¹²

And with the amount of data being collected by these organisations – there will be no need for Western educators to grapple with the privacy, ethical and technological challenges of trying to collect data to improve teaching. Not when giants like VIPKid collect 2.5 million minutes of data every day on the interactions between their teachers and learners.

Taken together there are three intersecting reasons why I believe this AI revolution will transform all teaching, all across the world:

1. the sheer volume of data being collected (truly ‘big data’)
2. the widespread acceptance, within China and by the Western teachers employed by the Chinese ed-tech giants, of AI monitoring, and
3. the fact that because these ed-tech giants are employing Western teachers who also work in Western schools – this is not simply “something happening in China”.

¹¹ Founder and CEO of DaDa, Hui Zhi, asks the question “Which teacher would you want teaching at DaDa?”. Most conference delegates selected those with the highest amount of time displaying ‘neutral’ responses. In fact the other two teachers who modelled a wider range of emotions (but may not have been feeling them themselves) are the more effective teachers.

¹² Note even here the evidence of investment in pedagogy and professional learning is deeply impressive. VIPKid, for example, brings its thousands of US teachers together monthly in major cities all across the 50 US states and they also run large regional conferences for teachers. The purpose is (a) to share evidence of what constitutes good teaching practice and (b) to build a camaraderie amongst the teacher cohort.

Pedagogy will change in the West as a result of the scale and nature of Western teachers' involvement with leading Chinese ed-tech companies.

What these teachers learn about effective teaching practices will inevitably be transferred to their classrooms. It will be picked up by academics undertaking research into how to improve educational performance. And once we know how to improve education within classrooms – it won't be long until that knowledge is transferred into VET, higher education, and corporate training.

In the global world we live in – these changes will not remain within China – they will be shared around the world.

Other observations

While much of the focus on ed-tech in China at the moment, is on the after-school sector – the likelihood that ed-tech (backed by AI) will revolutionise the VET sector is increasingly likely.

For those of you who received my advice following my attendance at the June 2018 EdTechXEurope conference – you will recall how almost all of the speakers, including global giants like Coursera and Laureate, spoke about the way in which corporate training/upskilling/vocational training was already changing and would soon rapidly change as a result of AI. Leading ed-tech entrepreneurs and educators were focussed on this sector because of the way the world of work is changing and the need for people to upskill and reskill as a consequence.

Governments cannot afford to pay for the amount of retraining that is likely to be needed to help workers adapt to automation and other technological change in their workplace; and the pace of change means that face-to-face training is unlikely to be able to gear up quickly enough to meet the challenge. In addition, AI allows for personalised learning for every individual, in their workplace.

A number of speakers at the GET 2018 Conference pointed out that while ed-tech in China is currently focussed on the after-school sector (because of its size) the sector will eventually turn its attention to the upskilling challenge facing employers and their workers. Major companies and ed-tech providers in the US, Europe and the UK are already grappling with this and pursuing opportunities. When the Chinese turn their focus to it – they will bring all of the technological and pedagogical expertise they have gained in the afterschool sector.

Also during the conference I was pleased to learn about initiatives the Singapore government has in place to respond to the impact of the changing world of work and the support they provide their citizens to adapt to these changes. I also learned more about changes happening in the world of work in Thailand, Vietnam and Indonesia from conference delegates and the ed-tech responses to upskill affected workers.

From program participants I learnt about ed-tech initiatives in Australia, Brazil, Canada, China, India, Indonesia, Italy, Russia, Singapore, South Africa, Spain, UK, and the US. We were also fortunate to have a presentation on higher education in China from Dr Zhou Zhong, Professor of Comparative Education at Tsinghua University.

If you have any questions or would like to learn more – please feel free to contact me.

Appendix A

HolonIQ China Executive Program (10 – 15 November 2018)

Saturday 10 November

- Architecture of K-12 Education in China
- China Higher Education System
- China's Edtech and Innovation Landscape

Sunday 11 November

- Cross-cultural strategies for doing business in China
- Setting up your educational business in China
- Legal considerations
- Marketing, Social Media in China
- Education Entrepreneurship in China – Masterclass

Monday 12 November

- New Oriental
- TAL Education Group
- Youdao at Netease
- Microsoft China

Tuesday 13 November

- GET conference
- 17zuoye

Wednesday 14 November

- GET conference
- VIPKid

Thursday 15 November

- Evaluating your China options and building a roadmap
- GET conference